

AN ORDINANCE OF THE BOARD OF COUNTY COMMISSIONERS OF PALM BEACH COUNTY, FLORIDA, REPEALING ORDINANCE 96-46, PALM BEACH COUNTY AMENDMENTS TO THE NATIONAL ELECTRICAL CODE, 1996 EDITION; ADOPTING THE PALM BEACH COUNTY AMENDMENTS TO THE NATIONAL ELECTRICAL CODE, 1999 EDITION; PROVIDING FOR APPLICABILITY; PROVIDING FOR SAVINGS CLAUSE; PROVIDING FOR REPEAL OF LAWS IN CONFLICT; PROVIDING FOR INCLUSION IN THE CODE; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, Chapter 125 of the Florida Statutes empower counties to provide for the health, safety and general welfare including the enactment and enforcement of construction and related technical standards and regulations; and

WHEREAS, pursuant to Chapter 90-445, Laws of Florida, as amended, Palm Beach County has adopted by Ordinance the National Electrical Code, 1999 edition; and

WHEREAS, Chapter 90-445, Laws of Florida, as amended, authorizes Palm Beach County to adopt by ordinance, amendments to modify and improve its construction codes to meet local conditions, provided that said amendments do not lower the standards of the minimum code adopted; and

WHEREAS, pursuant to Chapter 90-445, and F.S. 553.73(a), the Building Code Advisory Board of Palm Beach County has reviewed local conditions and based on this review, has recommended the adoption of these amendments; and

WHEREAS, the adoption of these amendments will be in the public interest by strengthening the National Electrical Code, 1999 edition, for the health, safety and general welfare of citizens in the unincorporated area of Palm Beach County; and

1 **WHEREAS**, the Citizens Task Force, sitting as the Land Development
2 Regulation Commission finds that these amendments comply with all requirements of the
3 Comprehensive Plan.

4 **NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF**
5 **COUNTY COMMISSIONERS OF PALM BEACH COUNTY, FLORIDA, that:**

6 **SECTION 1 - REPEAL OF THE PALM BEACH COUNTY AMENDMENTS TO THE**
7 **NATIONAL ELECTRICAL CODE, 1996 EDITION**

8 The Palm Beach County Amendments to the National Electrical Code, 1996
9 edition, Ordinance 96-46, as amended, is hereby repealed.

10 **SECTION 2 - ADOPTION OF PALM BEACH COUNTY AMENDMENTS TO**
11 **THE NATIONAL ELECTRICAL CODE, 1999 EDITION**

12 The Palm Beach County Amendments to the National Electrical Code, 1999
13 edition, hereto attached, are hereby adopted and incorporated herein.

14 **SECTION 3 - APPLICABILITY**

15 This National Electrical Code, 1999 edition, as amended by the attached
16 amendments shall be the minimum electrical standards for the unincorporated areas of Palm
17 Beach County and for those municipalities within Palm Beach County for which the Palm
18 Beach County Planning, Zoning and Building Department provides construction code plan
19 review and inspection services pursuant to intergovernmental agreement. This ordinance
20 shall apply as far as possible to any future editions of the National Electrical Code, which may
21 be adopted by the State or County for Palm Beach County, until such time as Palm Beach
22 County may adopt new amendments.

23 **SECTION 4 - REPEAL OF LAWS IN CONFLICT**

24 Ordinance 96-46 is hereby repealed and all ordinances, or parts of ordinances
25 of Palm Beach County , Florida, which are in conflict are hereby repealed. All or any part of
26 those local laws which pertain to Palm Beach County, Florida, which conflict with this
27 ordinance or parts of this ordinance are hereby repealed.

1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0

SECTION 6 - SEVERABILITY

SECTION 7 - EFFECTIVE DATE

APPROVED AND ADOPTED by the Board of County Commissioners of Palm

Beach County, Florida, on this 21 day of December, 1999.

**PALM BEACH COUNTY, FLORIDA, BY ITS
BOARD OF COUNTY COMMISSIONERS:**

BY: Maude Ford Lee
Chair Maude Ford Lee

**APPROVED AS TO FORM
AND LEGAL SUFFICIENCY:**

**DOROTHY H. WILKEN, CLERK
BOARD OF COUNTY COMMISSIONERS**

By: Lana Becke

By Donna S. Atwood
Deputy Clerk

Filed with the Department of State on the 23rd day of December,
1999.

**PALM BEACH COUNTY AMENDMENTS
TO THE
NATIONAL ELECTRICAL CODE,
1999 EDITION**



CODING:

Words underlined are additions to the 1999 NEC
Words stricken are deletions to the 1999 NEC

ARTICLE 90 - INTRODUCTION

90-10 - INCORPORATION OF STANDARD

The latest adopted edition of the Palm Beach County Building Codes Enforcement Administrative Code is hereby adopted by reference and is incorporated as if herein, and is intended to provide for the administrative aspects of the National Electrical Code and these amendments thereto.

CHAPTER 1. General

ARTICLE 100 - DEFINITIONS

Scope. This article contains only those definitions essential to the proper application of this Code. It is not intended to include commonly defined general terms or commonly defined technical terms from related codes and standards. In general, only those terms used in two or more articles are defined in Article 100. Other definitions are included in the article in which they are used but may be referenced in Article 100.

Part A of this article contains definitions intended to apply wherever the terms are used throughout this Code. Part B contains definitions applicable only to the parts of articles specifically covering installations and equipment operating at over 600 volts, nominal. All the definitions as listed in the latest adopted edition of the Standard Building Code shall be a part of this Code.

Article 110 - Requirements for Electrical Installations

B. 600 Volts, Nominal, or Less

110-26 Spaces About Electrical Equipment.

110-26(1)(b) Foreign Systems. The space equal to the width and depth of the equipment shall be kept clear of foreign systems. Foreign systems above the dedicated electrical space shall have ~~unless~~ protection is provided to avoid damage from condensation, leaks, or breaks in such foreign systems. This zone shall extend from 6 ft (1.83m) above the top of the electrical equipment to the structural ceiling.

CHAPTER 2. WIRING DESIGN AND PROTECTION

ARTICLE 210 - BRANCH CIRCUITS

A. General Provisions

210-1 Scope. ~~This article covers branch circuits except for branch circuits which supply only motor loads, which are covered in Article 430. Provisions of this article and Article 430 apply to branch circuits with combination loads.~~ The provisions of this article apply to branch circuits supplying lighting or appliance loads or combinations of both. Where motors or motor-operated appliances are connected to any branch circuit that also supplies lighting or other appliance loads, the provisions of both this article and article 430 shall apply. Article 430 applies where a branch circuit supplies motor loads only. Branch circuits shall be plainly marked at the overcurrent protective device so that they can be quickly and positively identified.

Section 210-8. Ground-Fault Circuit-Interrupter Protection for Personnel.

210-8(a)

(7) ~~Wet bars~~ All sinks. Where the receptacles are installed to serve the counter top surfaces and are located within 6 ft. (1.83 m) of the outside edge of ~~the wet bar sinks.~~ all sinks. Receptacle outlets shall not be installed in a face-up position in the work surfaces or countertops.

(b) **Other than Dwelling Units.** All 125-volt, single-phase, 15- and 20-ampere receptacles installed in the locations specified below shall have ground-fault circuit-interrupter protections for personnel.

(1) Bathrooms.

(2) Rooftops.

(3) Outdoors.

(4) All sinks. Where the receptacles are installed to serve the counter top surfaces and are located within 6 ft. (1.83 m) of the outside edge of all sinks.

Exception No.1: Receptacles that are not readily accessible and are not supplied from a dedicated branch circuit for electric snow-melting or deicing equipment shall be permitted to be installed in accordance with the applicable provisions of Article 426.

Exception No.2 to (3) and (4) above: A single receptacle or duplex receptacle for two appliances located within dedicated space for each appliance that in normal use is not easily moved from one place to another, and that is cord-and-plug connected in accordance with Section 400-7(a)(6), (a)(7), or (a)(8).

210-11(c)(4) General Lighting Outlets - Dwelling Unit. In dwelling units, a 15 ampere circuit may have ten (10) general lighting outlets and a 20 ampere circuit may have twelve (12) general lighting outlets.

B. Branch-Circuit Ratings

210-26. Appliance Branch Circuits Dwelling Unit(s). The following appliances shall be installed on a separate branch circuit: (1) air conditioners, (2) refrigerators, (3) dishwashers, (4) garbage disposals, (5) microwave ovens, and (6) any appliance rated at or above 1/2 horsepower or 750 watts resistive load.

C. Required Outlets

210-50 General.

(d) Spacing. Any building to be used for other than office occupancies, warehouses used for storage only or dwelling units, shall have receptacles installed each twenty (20) feet of unencumbered wall space. All receptacles shall be installed at accessible locations and this accessibility shall be maintained regardless of wall fixtures or other modifications. Office occupancies shall have receptacles installed each twelve (12) feet of unencumbered wall space. Receptacles are not required in warehouses used for storage only.

210-52. Dwelling Unit Receptacle Outlets.

(b) Small Appliances.

(1) In the kitchen, pantry, breakfast room, dining room, or similar area of a dwelling unit, the two or more 20-ampere small appliance branch circuits required by Section 210-11(c)(1) shall serve all receptacle outlets covered by Sections 210-52(a) and (c). ~~and receptacle outlets for refrigeration equipment.~~

Exception No. 1: In addition to the required receptacles specified by Section 210-52, switched receptacles supplied from a general-purpose branch circuit as defined in Section 210-70(a)(1), Exception No. 1 shall be permitted.

Exception No. 2: The receptacle outlet for refrigeration equipment shall be ~~permitted to be~~ supplied from an individual branch circuit rated 15 amperes or greater.

210-63. Heating, Air-conditioning and Refrigeration Equipment Outlet. A 125-volt, single-phase, 15- or 20-ampere-rated receptacle outlet shall be installed at an accessible location for the servicing of heating, air-conditioning, and refrigeration equipment. ~~on rooftops and in attics and crawl spaces.~~ The receptacle shall be located on the same level and within 25 feet (7.62 m) of the heating, air-conditioning, and refrigeration equipment. The receptacle outlet shall not be connected to the load side of the equipment disconnection means.

Exception: ~~Rooftop equipment on one- and two-family dwellings.~~

(FPN) See Section 210-8 for ground-fault circuit-interrupter requirements.

ARTICLE 215 - FEEDERS

~~**215-8. Means of Identifying Conductor with the Higher Voltage to Ground.** On a 4-wire, delta-connected secondary where the midpoint of one phase is grounded to supply lighting and similar loads, the phase conductor having the higher voltage to ground shall be identified by an outer finish that is orange in color or by tagging or other effective means. Such identification shall be placed at each point where a connection is made if the grounded conductor is also present.~~

Identification of Feeder Conductors. Feeder conductors in NEW BUILDINGS shall be identified by color or tagging or by other effective methods at each point a connection is made if the neutral conductor is also present.

Exception: The existing system of coding may be maintained in new buildings or additions to existing buildings at industrial and commercial installations.

(a) 120/240 volt, single phase, three wire system.

<u>Phase "A"</u>	<u>- Black</u>
<u>Phase "B"</u>	<u>- Red</u>
<u>Neutral</u>	<u>- White</u>

(b) 208Y/120 volt, three phase, four wire system.

<u>Phase "A"</u>	<u>- Black</u>
<u>Phase "B"</u>	<u>- Red</u>
<u>Phase "C"</u>	<u>- Blue</u>
<u>Neutral</u>	<u>- White</u>

(c) 480Y/277 volt, three phase, four wire system.

<u>Phase "A"</u>	- Brown
<u>Phase "B"</u>	- Purple
<u>Phase "C"</u>	- Yellow
<u>Neutral</u>	- Gray

(d) 240 delta/120 volt, three phase, four wire system (open delta)

<u>Phase "A"</u>	- Black
<u>Phase "B"</u>	- Orange (higher voltage to ground or high leg)
<u>Phase "C"</u>	- Red
<u>Neutral</u>	- White

Note: A cabinet or enclosure shall be identified by the words "OPEN DELTA" where internal Phase "B" and neutral conductors are connected.

215-12. Feeder Conductors. All feeder conductors to panelboards shall be installed in an approved raceway. In addition all feeder conductors to panelboards with extra circuit spaces in one and two family dwelling shall include a grounded (neutral) conductor and shall be sized not less than the equipment grounding conductor specified in section 250-95.

ARTICLE 230 - SERVICES

B. Overhead Service-Drop Conductors

230-28 Service Masts as Supports.

Where a service mast is used for the support of service-drop conductors, it shall be of adequate strength or be supported by braces or guys to withstand safely the strain imposed by the service drop. Where raceway-type service masts are used, raceway shall be rigid metal conduit or intermediate metal conduit, minimum 2", and all raceway fittings shall be identified for use with service masts. Only power service-drop conductors shall be permitted to be attached to a service mast.

D. Service - Entrance Conductors

230-43. Wiring Methods for 600 Volts, Nominal or Less.

Service-entrance conductors shall be installed in accordance with the applicable requirements of this Code covering the type of wiring method used and shall be limited to the following methods: ~~(1) open wiring on insulators; (2) Type IGS cable;~~ (1) rigid metal conduit; (2) intermediate metal conduit; (3) electrical metallic tubing; ~~(6) electrical nonmetallic tubing (ENT); (7) service-entrance cables;~~ (4) wireways; (5) busways; (6) auxiliary gutters; (7) rigid nonmetallic conduit; (8) cablebus; ~~(13) Type MC cable;~~ (9) mineral-insulated, metal-sheathed cable; ~~(15) flexible metal conduit not over 6 feet (1.83 m) long or liquidtight flexible metal conduit not over 6 ft (1.83 m) long between raceways, or between raceway and service equipment, with equipment bonding jumper routed with the flexible metal conduit or the liquidtight flexible metal conduit according to the provisions of Section 250-102(a), (b), (c), and (e); or (16) liquidtight flexible nonmetallic conduit.~~

Cable tray systems shall be permitted to support cables for use as service-entrance conductors in accordance with Article 318.

F. Service Equipment - Disconnecting Means

230-70. General.

(a) Location. The service disconnecting means shall be installed at a readily accessible location either outside of a building or structure, or inside nearest the point of entrance of the service conductors. If more than eight (8) feet, per set of service entrance conductors are located inside of the building as determined by Section 230-6, a disconnect with overcurrent protection must be installed at the location the conductors enter the building.

Service disconnecting means shall not be installed in bathrooms.

ARTICLE 250 - GROUNDING

C. Grounding Electrode System and Grounding Electrode Conductor

250-62. Grounding Electrode Conductor Material. The grounding electrode conductor shall be of copper, ~~aluminum, or copper-clad aluminum.~~ The material selected shall be resistant to any corrosive condition existing at the installation or shall be suitably protected against corrosion. The conductor shall be solid or stranded, insulated, covered, or bare.

F. Equipment Grounding and Equipment Grounding Conductors

250-118. Types of Equipment Grounding Conductors.

(4) Electrical metallic tubing. When using electrical metallic tubing in an exterior location, for feeders or branch circuits, an insulated equipment grounding conductor shall be installed to assure a continuous bond.

Chapter 3. Wiring Methods and Materials

ARTICLE 300 - WIRING METHODS

A. General Requirements

300-2 - Limitations.

(c) Permitted Wiring Methods. Only those wiring systems listed in Table 300-2 (c) are permitted for use, except as provided by Section 90-2 (c).

TABLE 300-2 (c)
PERMITTED WIRING SYSTEMS ☆

ARTICLE		1 & 2 Family Dwelling	Multi-Family Dwelling	Commercial Non-Dwelling
305	Temporary Wiring	YES	YES	YES
318	Cable Trays	YES	YES	YES
320	Open Wiring on Insulators	NO	NO	NO
321	Messenger Supported	YES	YES	YES
324	Concealed Knob-and Tube Wiring	NO	NO	NO
325	Integrated Gas Spacer Cable Type IGS	NO	NO	YES
326	Medium Voltage Cable Type MV	NO	NO	YES
328	Flat Conductor Cable Type FCC	YES	YES	YES
330	Mineral-Insulated, Metal Sheathed Cable Type MI	YES	YES	YES
331	Electrical Nonmetallic Tubing	YES	YES	YES
333	Armored Cable Type AC	YES	YES	YES
334	Metal-Clad Cable Type MC	YES (1)	YES (1)	YES (1)
336	Nonmetallic-Sheathed Cable Types NM, NMC, and MNS	YES	NO	NO
338	Service-Entrance Cable Type SE and USE	YES (2)	NO	NO
339	Underground Feeder and Branch-Circuit Cable Type UF	YES	(3)	(3)
340	Power and Control Tray Cable Type TC	NO	NO	YES
342	Nonmetallic Extensions	YES	NO	NO
343	Nonmetallic Underground Conduit with Conductors	YES	YES	YES
345	Intermediate Metal Conduit	YES	YES	YES
346	Rigid Metal Conduit	YES	YES	YES
347	Rigid Nonmetallic Conduit	YES	YES	YES
348	Electrical Metallic Tubing	YES	YES	YES
349	Flexible Metallic Tubing	YES	YES	YES
350	Flexible Metal Conduit	YES	YES	YES
351	Liquidtight Flexible Metal Conduit and Liquidtight Flexible Nonmetallic Conduit	YES	YES	YES
352	Surface Metal Raceways and Surface Nonmetallic Raceways	YES	YES	YES
353	Multioutlet Assembly	YES	YES	YES
354	Underfloor Raceways	YES	YES	YES
356	Cellular Metal Floor Raceways	YES	YES	YES
358	Cellular Concrete Floor Raceways	YES	YES	YES
362	Metal Wireways and Nonmetallic Wireways	YES	YES	YES
363	Flat Cable Assemblies Type FC	YES	YES	YES
364	Busways	YES	YES	YES
365	Cablebus	YES	YES	YES
374	Auxiliary Gutters	YES	YES	YES

☆ = See specific Article for use limitations

(1) = Shall not be embedded in concrete

(2) = For branch circuit wiring only

(3) = Uses over 50 volts prohibited

YES = Permitted wiring system

NO = Prohibited wiring system

ARTICLE 310 - CONDUCTORS FOR GENERAL WIRING

310-2. Conductors.

(b) Conductor Material. Conductors in this article shall be aluminum, copper-clad aluminum, or copper unless otherwise specified.

(1) Aluminum, and copper clad aluminum conductors smaller than No. 2 A.W.G. shall not be installed.

(2) Aluminum and copper clad aluminum conductors shall not be used for grounding or bonding.

ARTICLE 333 - ARMORED CABLE

Type AC

C. Construction Specifications

333-21. Grounding. Type AC cable shall include a separate copper grounding conductor and shall provide an adequate path for equipment grounding as required by Section 250-2(d).

(a) Type AC cable with a full size ground conductor, sized by 250-122, and an outer metal armor or sheath that is identified as an acceptable ground return path may be used as provided in Article 517-13.

Type AC cable shall be terminated with listed connectors.

ARTICLE 334 - Metal Clad Cable: Type MC

A. General

334-4 Uses Not Permitted. Type MC cable shall not be used where exposed to destructive corrosive conditions, such as direct burial in the earth, in concrete, or where exposed to cinder fills, strong chlorides, caustic alkalis, or vapors of chlorine or hydrochloric acids, unless the metallic sheath is suitable for the condition or is protected by material suitable for the conditions. Type MC cable shall not be embedded in concrete.

ARTICLE 336 - NONMETALLIC SHEATHED CABLE

Types NM, NMC and NMS

A. General

336-4. Uses Permitted. Type NM, Type NMC, and Type NMS cables shall be permitted to be used in the following:

- (1) One- and two-family dwellings
- ~~(2) multi-family dwellings and other structures except as prohibited in Section 336-5.~~
- (3) Cable trays, where the cables are identified for the use

Type NM and NMC cable shall comply with this article and also with the applicable provisions of other articles in this Code, particularly Article 300 and 300-4(d).

(FPN): See Section 310-10 for temperature limitation of conductors.

ARTICLE 339 - UNDERGROUND FEEDER AND BRANCH CIRCUIT CABLE

Type UF

339-3. Use.

(b) Uses Not Permitted. Type UF cable shall not be used in the following:

- (1) As service-entrance cables; (2) In commercial garages; (3) In theaters; (4) In motion picture studios; (5) In storage battery rooms; (6) In hoistways; (7) In any hazardous (classified) locations;
- (8) Embedded in poured cement, concrete, or aggregate, except where embedded in plaster as nonheating leads as provided in Article 424; (9) Where exposed to direct rays of the sun, unless identified as sunlight-resistant;
- (10) Where subject to physical damage; (11) in systems over 50 volts prohibited in other than one and two family dwellings.

ARTICLE 348 - ELECTRICAL METALLIC TUBING

A. General

348-4. Uses Permitted

(b) Corrosion Protection. Ferrous or nonferrous electrical metallic tubing, elbows, couplings, and fittings shall be permitted to be installed in concrete above grade, ~~in direct contact with the earth, or in areas subject to severe corrosive influences where protected by corrosion protection and judged suitable for the condition.~~

FPN: See Section 300-6 for information on protection against corrosion.

FPN: See Section 250-118(4) for grounding requirements.

348-5. Uses Not Permitted. Electrical metallic tubing shall not be used

(1) Where, during installation or afterward, it will be subject to severe physical damage; (2) Where protected from corrosion solely by enamel; (3) In cinder concrete or cinder fill where subject to permanent moisture unless protected on all sides by a layer of noncinder concrete at least 2 inches (50.8 mm) thick or unless the tubing is at least 18 inches (457 mm) under the fill; (4) In any hazardous (classified) location except as permitted by Section 502-4, 503-3, and 504-20; (5) for the support of fixtures or other equipment except conduit bodies no larger than the largest trade size of the tubing. Where practicable, dissimilar metals in contact anywhere in the system shall be avoided to eliminate the possibility of galvanic action; (6) Slabs on grade; (7) In direct contact with earth

Exception: Aluminum fittings and enclosures shall be permitted to be used with steel electrical metallic tubing.

ARTICLE 370 - OUTLET, DEVICE, PULL AND JUNCTION BOXES, CONDUIT BODIES AND FITTINGS

B. Installation

370-29. Conduit Bodies, Junction, Pull and Outlet Boxes to be Accessible. Conduit bodies, junction, pull and outlet boxes shall be so installed that the wiring contained in them can be rendered accessible without removing any part of the building or in underground circuits without excavating sidewalks, paving, earth, or other substance that is to be used to establish the finish grade.

(a) Suspended Ceiling. Junction, pull and outlet boxes shall be installed not more than four (4) feet above a suspended ceiling.

Exception: Listed boxes shall be permitted where covered by gravel, light aggregate, or noncohesive granulated soil if their location is effectively identified and accessible for excavation.

ARTICLE 380- SWITCHES

A. Installation

380-8 Accessibility and Grouping

(c) HVAC, Refrigeration and Heating Disconnect. A disconnecting means shall be installed within six (6) feet from the service side of the HVAC, refrigeration and heating equipment.

ARTICLE 384 - SWITCHBOARDS AND PANELBOARDS

C. Panelboards

384-15. Number of Overcurrent Devices on One Panelboard. Not more than 42 overcurrent devices (other than those provided for in the mains) of a lighting and appliance branch-circuit panelboard shall be installed in any one cabinet or cutout box.

A lighting and appliance branch-circuit panelboard shall be provided with physical means to prevent the installation of more overcurrent devices than that number for which the panelboard was designed, rated, and approved.

For the purposes of this article, a 2-pole circuit breaker shall be considered two overcurrent devices; a 3-pole circuit breaker shall be considered three overcurrent devices.

(a) Extra Space. In each branch-circuit panelboard of any one and two family dwelling, there shall be a minimum of two (2) extra spaces for fuse holders or breakers for future use.

(b) Extra Raceway. An empty raceway terminating in an accessible attic space or an empty raceway terminating in an accessible place either under the floor or to the exterior of the building above finish grade shall be installed. All empty raceways installed to the exterior of the building shall terminate above finish grade.

Chapter 8

Communications Systems

Article 800 - Communications Circuits

E. Communications Wires and Cables Within Buildings

800-53(g) Wet Locations. Cables shall be listed in accordance with 110-3(b).

STATE OF FLORIDA, COUNTY OF PALM BEACH
I, MOROOTHY H. WILKEN, Clerk of the
Board of County Commissioners, do hereby certify that this is a
true and correct copy of the original and in my office
on December 21, 1999.
WITNESSED at West Palm Beach, FL on 1/4/00.
MOROOTHY H. WILKEN, Clerk
by N. B. Broux D.C.